

Mechatronic Component Search for Electronic and Fluid Design

15th CADENAS Industry-Forum 2014

Joachim Frank



Topics

- Overview Zuken / E3.series
- How does the CADENAS Electronic Product Catalog help in the search for and creation of components for the E-CAD system E³.series?
- Data Transfer Supported using eCl@ss 8 Advanced
 - Who is eCl@ss?
- Using the Data for Schematics, Cabling, Fluidics and Panel Layout
- How does the E-CAD user benefit?



Sales and Support Organization

More Than 30 Offices Worldwide



Zuken GmbH
European Headquarters
Munich, Germany

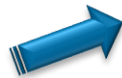


Zuken Inc.
Worldwide Headquarters
Yokohama, Japan

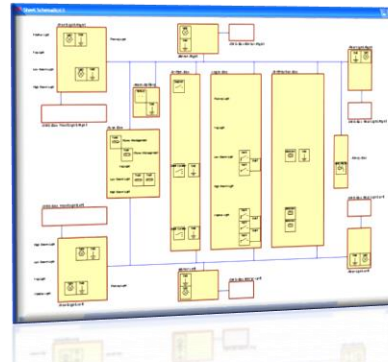


Zuken USA Inc.
North American Headquarters
Westford, Massachusetts

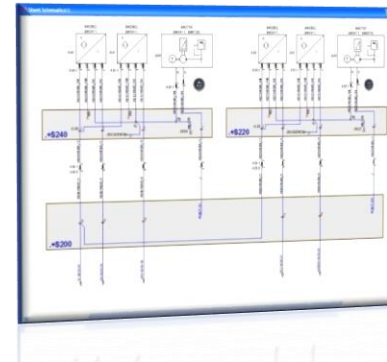
Requirements
Management



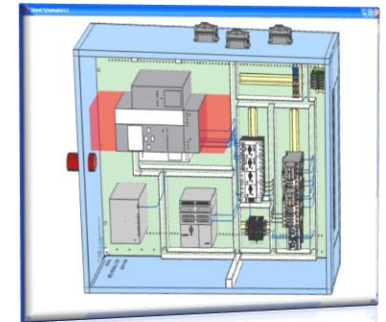
Topology and
Functional Planning



Circuit Engineering



Panel Layout



e-PLM Library and Design Data Management

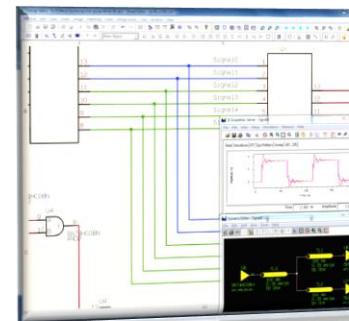
Platform
Standardization



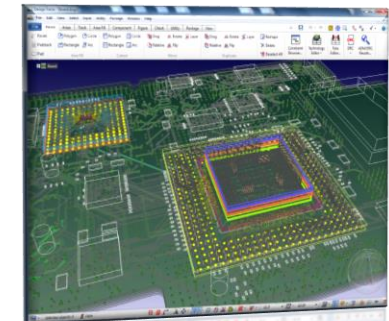
System Planning

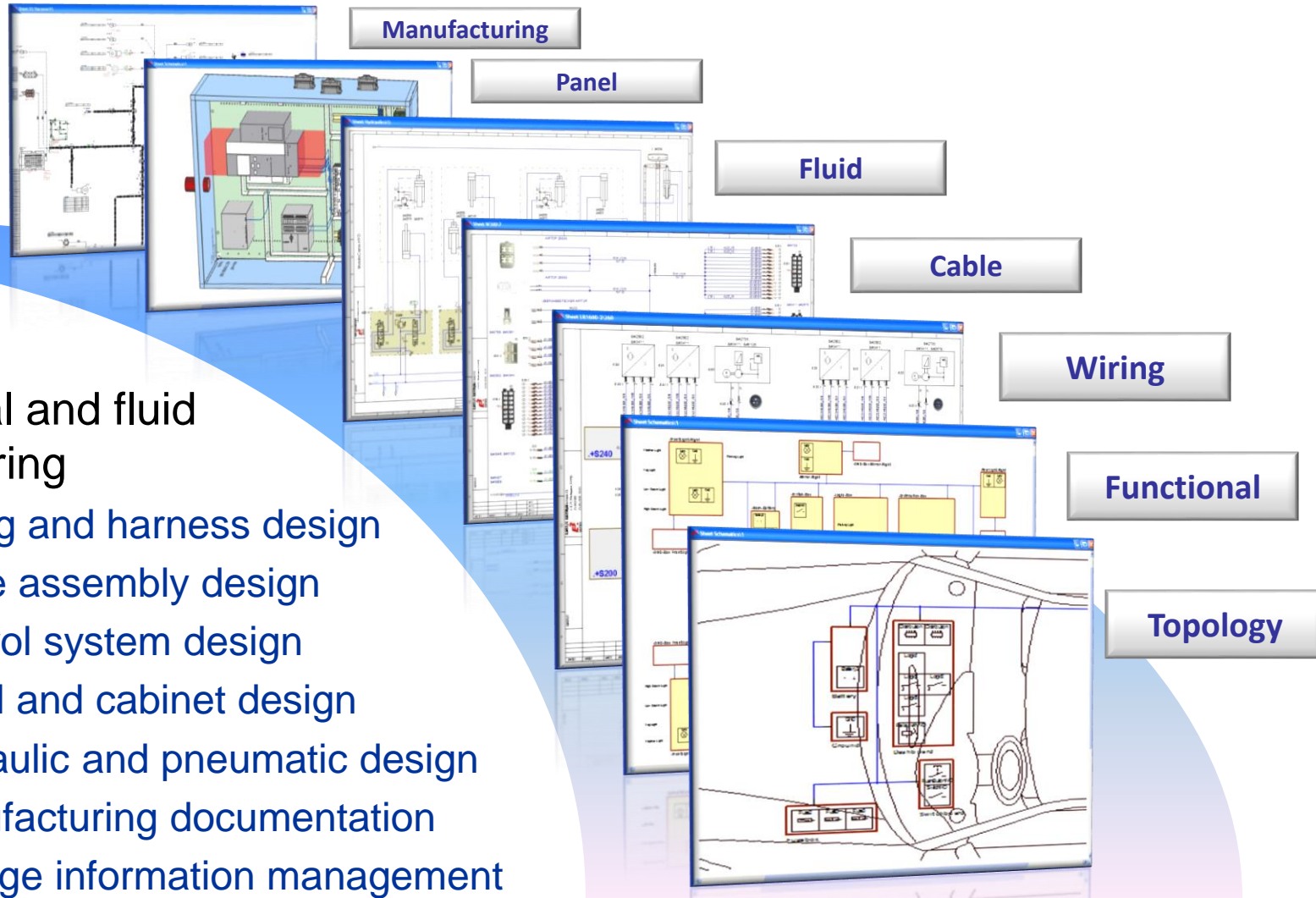


Circuit Engineering



PCB and Package
Layout



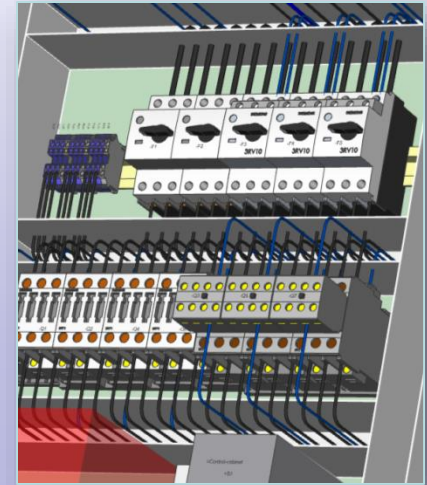


- Electrical and fluid engineering
 - Wiring and harness design
 - Cable assembly design
 - Control system design
 - Panel and cabinet design
 - Hydraulic and pneumatic design
 - Manufacturing documentation
 - Change information management

Why E³.series?

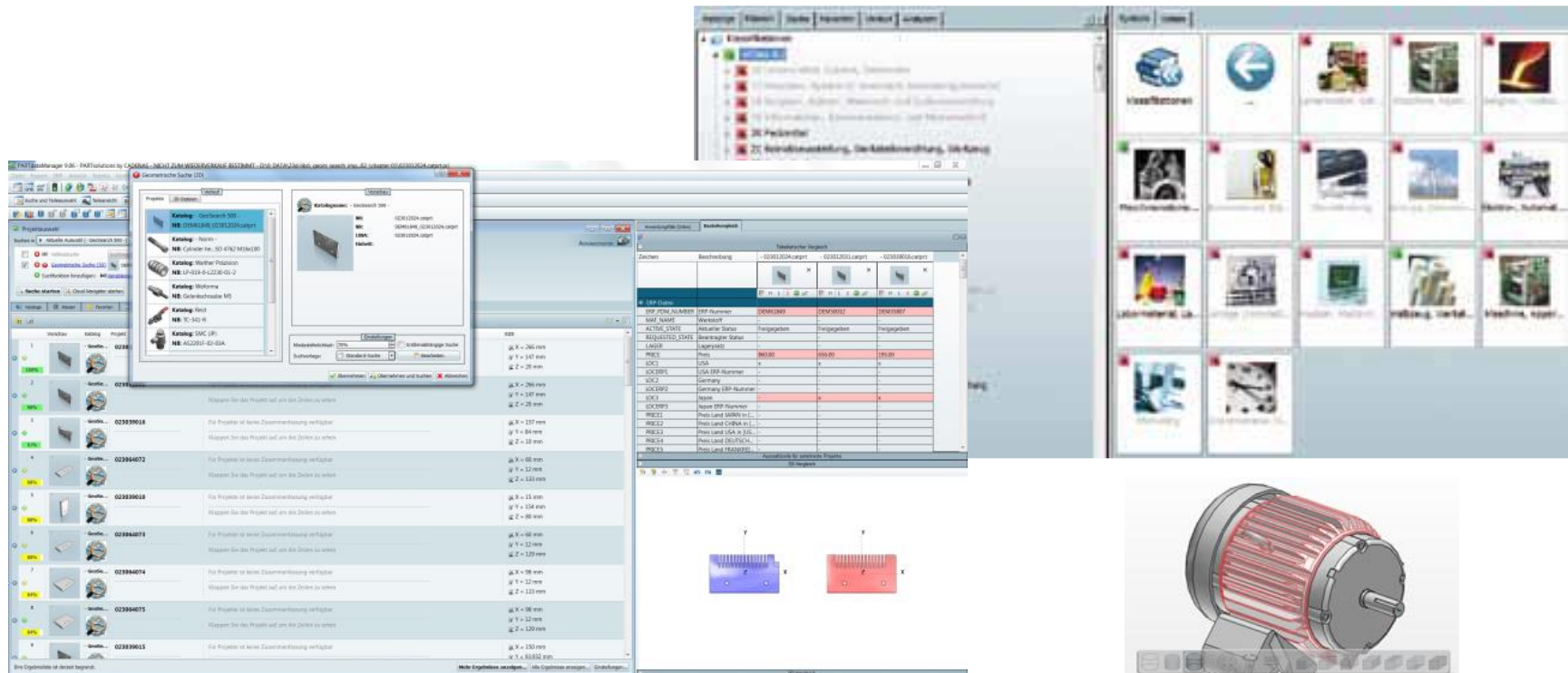


- Complete electrical and fluid design from concept to manufacturing
- All design information in all phases is kept in sync, reducing errors and rework
- Comprehensive change management ensures nothing slips through the net
- Manufacturing reports linked to real-time design data ensure accuracy
- Collaboration with all aspects of design, linking 3D mechanical data for harness creation and product lifecycle management



Mechatronic Component Search for Electronic and Fluid Design

- How does the CADENAS Electronic Product Catalog help in the search for and creation of components for the E-CAD system E³.series?
 - Search for components from different M-CAD, E-CAD and Fluid manufacturers in one central location



Mechatronic Component Search for Electronic and Fluid Design

- Portal: <http://zuken.partcommunity.com>
 - Component catalog containing mechatronic components
 - Comfortable search, filter and preview functionality

The screenshot displays the ZUKEN PartCommunity portal interface. The top navigation bar includes 'Willkommen' and 'CAD Modelle'. The main search area on the left shows a search bar with 'Festo' selected, and buttons for 'Suchen', 'Erweiterte Suche', and 'Klassifikationen'. Below the search bar, there are links for 'Zurück', 'Startseite', 'Suchergebnisse', 'Sprache', and 'QA Siegel'. A warning message states: 'Sie müssen angemeldet sein, um Aktionen durchführen zu können'. Below this, there are buttons for 'Generiere CAD MODELL' and 'Generiere PDF-Datenblatt'. The 'Geometrische Suche' section shows a slider for 'Ausblenden unter: 70 %' and a 'Geometrische Suche' button. The 'CAD Modelle' section displays a table of results:

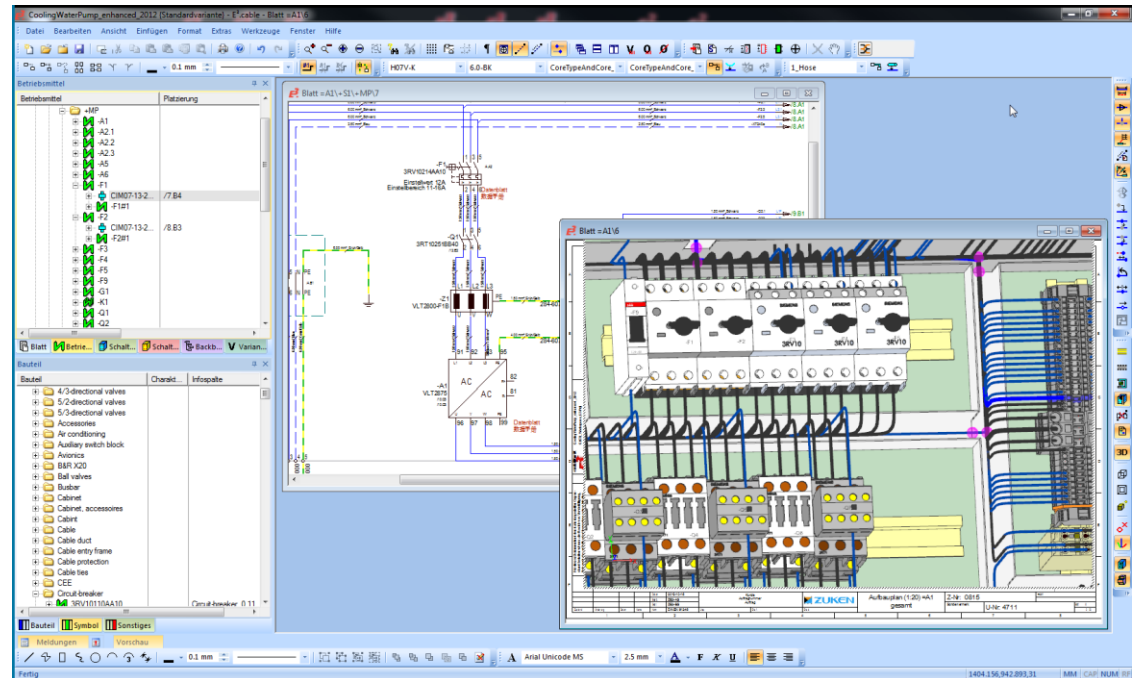
		LINA Stückliste	TML Teilnummer	ST ST Zahl	TYP Typ	VLS VLS [m]
9		191347 MNZH-2X3G-01-S-230VAC	191347	0	MNZH-2X3G-01-S-230VAC	
10		191341 MNZH-2X3G-01-S-ZSR	191341	1	MNZH-2X3G-01-S-ZSR	
11		191340 MNZH-2X3G-01-ZSR	191340	1	MNZH-2X3G-01-ZSR	
12		187976 MNZH-2X3G-02	187976	0	MNZH-2X3G-02	

The central part of the interface shows a 3D model of a component. To the right, there is a 'Vorschau' (Preview) section with a 'Modus 3D Ansicht' button and a 'Generiere Vorschau' button. Below this, there is a table of specifications:

PRODUKT/BILD	Produktbild	Wert
IDNR	Identifikation	110311
MANUFACTURE12	Herstellertypbezeichnung	NZ-160-BT
DESCRIPTION13	Kurzbeschreibung	Lasttrennschalter 3p 160A Klemmen
DESCRIPTION14	Langbeschreibung	Lasttrennschalter N... erfüllen die Trenneigenschaften auch für geerdete IT-Netze. Zubehör wie z. B. Brückenbausätze, Anschlussklemmen und Türkuppelndrehgriffe gestalten den individuellen Einbau in die unterschiedlichsten Verteilersysteme. Hilfsschalter, Spannungsauslöser und Fernantriebe ermöglichen Signalisierung und Automatisierung. Hinweise: Hauptschaltereigenschaften einschließlich Zwangsläufigkeit nach IEC/EN 60204 und VDE 0113. Trenneigenschaften nach IEC/EN 60947-3 und VDE 0660. Berührungsschutz nach VDE 0160 Teil 100.
EAN	EAN	4015081098590
CNSECCLASS512	ECLASS 5.1.2	27-37-14-03

Web Service

- Web Service Integration
 - Integration of CADENAS Web Service planned as plug-in in E³.series
 - E³ interface can be used to search for components directly in the CADENAS Web Service



Data Transfer

- CADENAS data independent of the CAD system
- Data transferred using standard eCI@ss format
- Automated import in E3.series library



Who is eCl@ss?



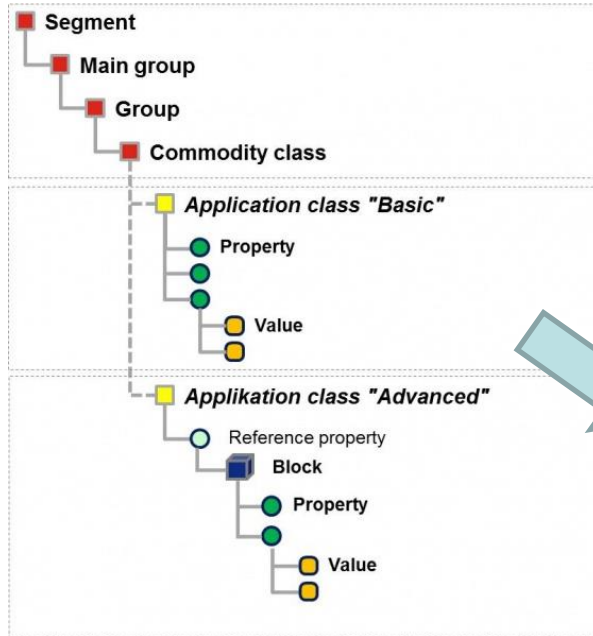
The international eCl@ss association, 143 members



Oct 2013, 143 members

www.eclass.eu

eCl@ss Structure



```

<ArticleNumber>3RV2311-1AC10</ArticleNumber>
<DataSheets>
  - <DataSheet>
    <FileName>11_Product-Datasheets\Product-Datasheets_de\3RV23111AC10_de.pdf</FileName>
    <Language>de-DE</Language>
  </DataSheet>
  - <DataSheet>
    <FileName>11_Product-Datasheets\Product-Datasheets_en\3RV23111AC10_en.pdf</FileName>
    <Language>en-US</Language>
  </DataSheet>
</DataSheets>
<Descriptions>
  - <Description>
    <Description>LEISTUNGSSCHALTER BGR. S00, FUER STARTERKOMBINATION, BEM.STROM 1,6A, N-AUSL. 21A, SCHRAUBANSCHLUSS,
    STANDARDSCHALTVERMOEGEN</Description>
    <Language>de-DE</Language>
  </Description>
  - <Description>
    <Description>CIRCUIT-BREAKER SZ S00, FOR STARTER COMBINATION, RATED CURRENT 1.6A, N-RELEASE 21A, SCREW CONNECTION, STANDARD SW.
    CAPACITY</Description>
    <Language>en-US</Language>
  </Description>
</Descriptions>
<DeviceLetterCode/>
<MainClassDescriptions>
  - <Description>
    <Description>Electric</Description>
    <Language>de-DE</Language>
  </Description>
  - <Description>
    <Description>Electrical</Description>
    <Language>en-US</Language>
  </Description>
</MainClassDescriptions>
<Name>3RV23111AC10</Name>
<Status>true</Status>
<SubClassDescriptions>
  - <Description>
    <Description>Leistungsschalter 3RV2</Description>
    <Language>de-DE</Language>
  </Description>
  - <Description>
    <Description>Leistungsschalter 3RV2</Description>
    <Language>en-US</Language>
  </Description>
</SubClassDescriptions>
  
```

Data Transfer Supported using eCI@ss 8 Advanced

- Starting with eCI@ss Version Advanced 7.1 all CAD data required for an E³.series component library contained therein
- CADENAS exports the eCI@ss XML data
 - The XML format includes all the information necessary for creating a complete E³.series component
 - Additional information (data sheets, graphic data) can also be supplied
- Components contained in the exchange file are imported automatically into the E³.series library



Workflow Example

- The CADENAS Portal contains different component manufacturer catalogs.
- Each catalog contains numerous different products.
- The E3 user selects one or more products / packages and starts the transfer to E3.series.
- In the background the relevant data (component meta data, symbols, models) of the selected product(s) is transferred to E3.series using a standardized exchange format.
- The components are available to the user and can be used in his/her project.

Using the Data for Schematics, Cabling, Fluid and Panel Layout

- Component is described completely for E³.series
 - Component meta data
 - Pins with
 - Position, pin type as well as cross-section / diameter information
 - Assignment of pins between symbols and models

The image displays three overlapping windows from the Zuken E3 software interface:

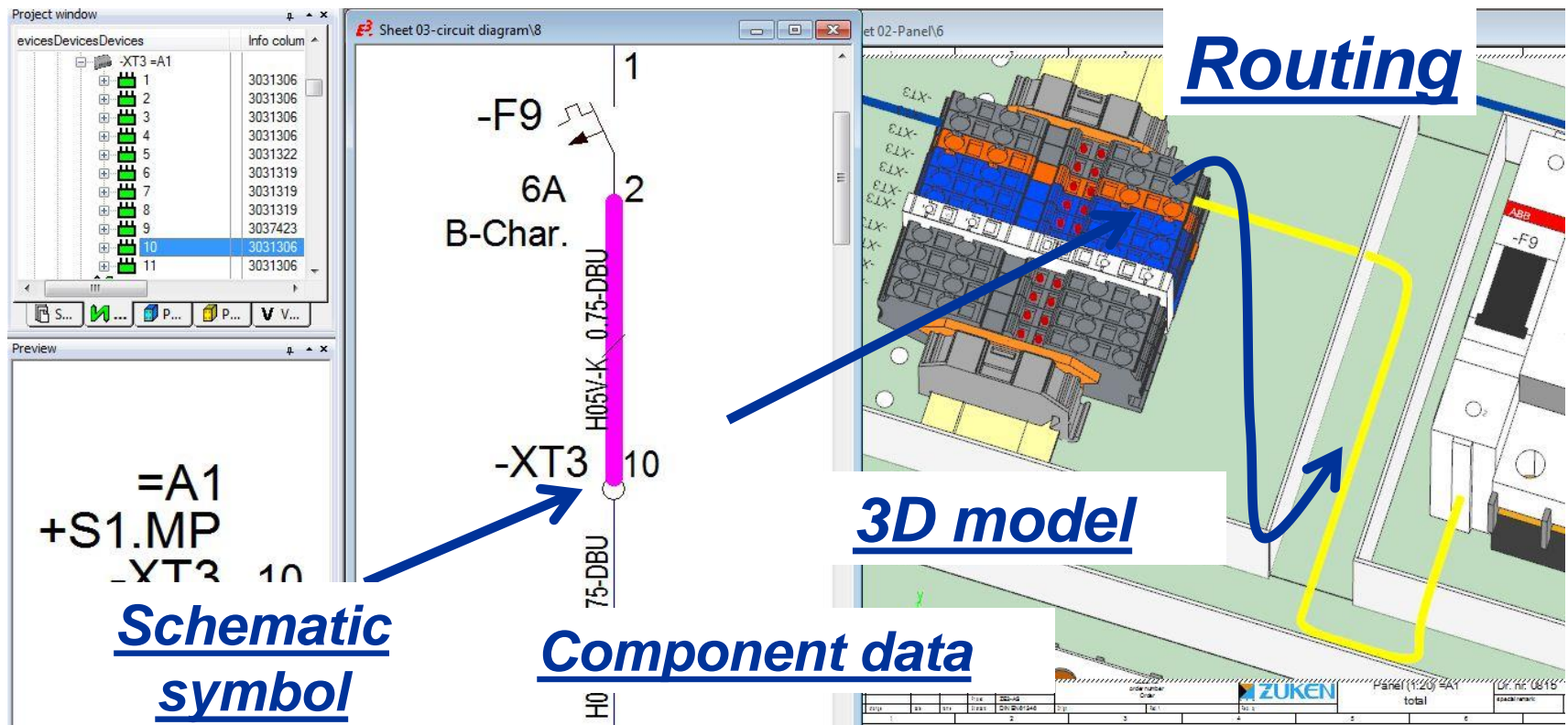
- Component Properties:** Shows metadata for component 3044076, including version, device letter code (X), and a table of technical specifications.
- Database Editor:** Shows a tree structure of components and models used in the project.
- 3D Model:** A vertical component model with a schematic symbol overlay. The symbol includes a blue box with the number '1' and various labels like '3044076', 'X', and '-X?'. Red dashed lines connect the symbol to the corresponding pins on the 3D model.

Large blue diagonal text across the middle reads "Component data".

Name	Entry
Article number	3044076
Class	Terminal
Description	Feed-through terminal block; UT 2,5; Connection metho
Main Class	Electric
Supplier	Phoenix Contact
Data sheet	data sheet ref="3044076_UT_2_5_de.pdf"
Database Class English	Terminal
Database Class German	Klemme
Database Description English	Feed-through terminal block; UT 2,5; Connection metho
Database Description German	Durchgangsklemme; UT 2,5; Anschlussart: Schraubanschl
Database User	BB
EAN Number	4017918960377
Hyperlink	http://eshop.phoenixcontact.de/phoenix/treeViewClick
New Feature	2012
Technical description 1	2,5 mm ²
Technical description 2	1000 V
Technical description 3	24 A
Weight	0.00816 kg

Using the Data for Schematics, Cabling, Fluid and Panel Layout

- Example: E³.schematic and E³.panel



How does the E-CAD user benefit?

- Without the time-consuming process of searching for the correct commercial, technical, component and symbol data...
 - the user can select components from the component manufacturer E³ library
 - the user can create a customer-specific library tailored to his/her specific needs
 - reduced subsequent reworking

Outlook



- The Development is on going!
- CADENAS is an Exhibitor at ZIW in Ulm.
- Presentation of Prototype from CADENAS Webservice integrated in E3.series





Please visit us in the exhibition area!



ZUKEN

The Partner for Success